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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,048	11/14/2003	Hisanobu Tokunaga	1190-0580P	9021
2292	7590	07/29/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			COLON, GERMAN	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	
			2879	

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/712,048

Applicant(s)

TOKUNAGA ET AL.

Examiner

German Colón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 111403.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Preliminary Amendment*

1. The Pre-Amendment, filed on November 14, 2003, has been entered and acknowledged by the Examiner.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1, 2 and 9 are rejected under 35 U.S.C. 102(a) as being anticipated by Hirose (JP 2002-367531).

Regarding claim 1, Hirose discloses a mask structure for use in a CRT (see Figs. 1 and 2) comprising:

a color-separating mask (see Fig. 2) made of a thin metal plate having a row of slits **9** formed therein with a predetermined pitch, the color-separating mask having a first hole-bearing area including all of the slits of the row except two outermost slits **11A** of the row and two second hole-bearing areas each of which includes one of the outermost slits **11A** (see Fig. 3); and

a mask frame **12** holding the mask while applying tension perpendicular to a direction in which the slits are arranged to the mask (see Fig. 2);

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wherein the thin metal plate has first projections 16 formed therein for each of the outermost slits, the first projections protruding to an opening of corresponding one of the outermost slits, and

wherein an opening area of the outermost slits of the second hole-bearing areas is smaller than an opening area of the slits of the first hole-bearing area (see Figs. 3A-3B and paragraph [0019]).

Regarding claim 2, Hirose discloses the opening area of the outermost slits of the second hole-bearing areas being smaller than 70% of the opening area of the slits of the first hole-bearing area (see paragraph [0019]).

Regarding claim 9, Hirose discloses a CRT including the mask structure (see Figs. 1 and 2).

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 6, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 6,472,806) in view of Shiohara et al. (US 5,396,145).

Referring to claims 1 and 9, Kim discloses a mask structure for use in a CRT (see Fig. 3) comprising:

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a color-separating mask **40** made of a thin metal plate having a row of slits **42** formed therein with a predetermined pitch, the color-separating mask having a first hole-bearing area including all of the slits of the row except two outermost slits of the row and two second hole-bearing areas each of which includes one of the outermost slits (see Figs. 4-5);

a mask frame **50** holding the mask while applying tension perpendicular to a direction in which the slits are arranged to the mask; and

wherein the thin metal plate has first projections **44,45** formed therein for each of the outermost slits, the first projections protruding to an opening of corresponding one of the outermost slits. Kim is silent regarding the limitation of an opening area of the outermost slits being smaller than an opening area of the slits of the first hole-bearing area.

However, in the same field of endeavor, Shiohara discloses a mask having a row of slits **11**, the mask having a first hole-bearing area and two second hole-bearing areas, and teaches to provide an opening area of the outermost slits **12a-12d** smaller than an opening area of the slits in the first hole-bearing area with the purpose of maintaining the end slits **11a** at the opposite ends of the effective area of the picture secured with a correct width (see Figs. 1(a)-4(a) and Col. 2, lines 27-34). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the outermost slits with an opening area smaller than that of the slits of the first hole-bearing area, in order to maintain the end slits at the opposite ends of the effective area of the picture secured with a correct width, improving the image quality.

Referring to claim 2, Kim-Shiohara discloses the opening area of the outermost slits of the second hole-bearing areas being smaller than 70% of the opening area of the slits of the first hole-bearing area (see ¶ 145, Col. 3, lines 7-9).

Referring to claim 3, Kim-Shiohara discloses the thin metal plate having second projections formed therein for each of the slits of the first hole-bearing area, the second projections protruding to an opening of corresponding one of the slits of the first hole-bearing area (see '806, Figs. 3-5).

Referring to claims 6 and 7, Kim-Shiohara discloses the first projections being formed on only one of the opposite sides of the opening of the outermost slits of the second hole-bearing area with a predetermined pitch in a direction of length of the outermost slit, and the second projections being formed on only one of the opposite sides of the opening of the slit of the first hole-bearing area with a predetermined pitch in a direction of length of the slit of the first hole-bearing area (see '806, Figs. 4-5).

6. Claims 1, 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore (US 4,926,089) in view of Shiohara et al. (US 5,396,145).

In regards to claim 1, Moore discloses a mask structure for use in a CRT (see Figs. 2a, 13 and 14) comprising:

a color-separating mask (see Fig. 2a) made of a thin metal plate having a row of slits 3 formed therein with a predetermined pitch, the color-separating mask having a first hole-bearing area including all of the slits of the row except two outermost slits of the row and two second hole-bearing areas each of which includes one of the outermost slits (see Figs. 11, 12 and 14);

a mask frame (see Figs. 2a and 14; and respective description) holding the mask while applying tension perpendicular to a direction in which the slits are arranged to the mask; and

wherein the thin metal plate has first projections **82** formed therein for each of the outermost slits, the first projections protruding to an opening of corresponding one of the outermost slits. Moore is silent regarding the limitation of an opening area of the outermost slits being smaller than an opening area of the slits of the first hole-bearing area.

However, in the same field of endeavor, Shiohara discloses a mask having a row of slits **11**, the mask having a first hole-bearing area and two second hole-bearing areas, and teaches to provide an opening area of the outermost slits **12a-12d** smaller than an opening area of the slits in the first hole-bearing area with the purpose of maintaining the end slits **11a** at the opposite ends of the effective area of the picture secured with a correct width (see Figs. 1(a)-4(a) and Col. 2, lines 27-34). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the outermost slits with an opening area smaller than that of the slits of the first hole-bearing area, in order to maintain the end slits at the opposite ends of the effective area of the picture secured with a correct width, improving the image quality.

In regards to claim 3, Moore-Shiohara discloses the thin metal plate having second projections formed therein for each of the slits of the first hole-bearing area, the second projections protruding to an opening of corresponding one of the slits of the first hole-bearing area (see '089, Figs. 12 and 14).

In regards to claim 8, Moore-Shiohara discloses the second projections being formed on opposite sides of the opening of the slit of the first hole-bearing area in a staggered format with a predetermined pitch in a direction of length of the slit of the first hole-bearing area (see '089, Figs. 12 and 14).

7. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin et al. (US 6,630,775) in view of Shiohara et al. (US 5,396,145).

Regarding claim 1, Shin discloses a mask structure for use in a CRT (see Figs. 3, 5 and 8) comprising:

a color-separating mask (see Fig. 3) made of a thin metal plate having a row of slits **33** formed therein with a predetermined pitch, the color-separating mask having a first hole-bearing area including all of the slits of the row except two outermost slits of the row and two second hole-bearing areas each of which includes one of the outermost slits (see Figs. 4-8);

a mask frame **40** holding the mask while applying tension perpendicular to a direction in which the slits are arranged to the mask; and

wherein the thin metal plate has first projections **34** formed therein for each of the outermost slits, the first projections protruding to an opening of corresponding one of the outermost slits. Shin is silent regarding the limitation of an opening area of the outermost slits being smaller than an opening area of the slits of the first hole-bearing area.

However, in the same field of endeavor, Shiohara discloses a mask having a row of slits **11**, the mask having a first hole-bearing area and two second hole-bearing areas, and teaches to provide an opening area of the outermost slits **12a-12d** smaller than an opening area of the slits in the first hole-bearing area with the purpose of maintaining the end slits **11a** at the opposite ends of the effective area of the picture secured with a correct width (see Figs. 1(a)-4(a) and Col. 2, lines 27-34). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the outermost slits with an opening area smaller than that of

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the slits of the first hole-bearing area, in order to maintain the end slits at the opposite ends of the effective area of the picture secured with a correct width, improving the image quality.

Regarding claim 3, Shin-Shiohara discloses the thin metal plate having second projections formed therein for each of the slits of the first hole-bearing area, the second projections protruding to an opening of corresponding one of the slits of the first hole-bearing area (see '775, Figs. 4 -8).

Regarding claims 4 and 5, Shin-Shiohara discloses the first projections being formed in pairs of projections on opposite sides of the opening of the outermost slit of the second hole-bearing area with a predetermined pitch, and the second projections being formed in pairs of projections on opposite sides of the opening of the slit of the first hole-bearing area (see '775, Figs. 4, 5 and 8).

### ***Prior Art of Record***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

JP 2001-167710, JP 2001-155653 and JP 2001-291476 disclose a mask having an outermost slit of opening area smaller than the opening area of the slits in the effective region of the mask.

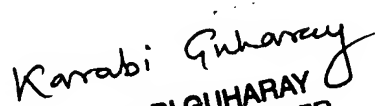
*Contact Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
gc

  
KARABI GUHARAY  
PRIMARY EXAMINER